

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C. 20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year)

18 February 2000 (18.02.00)

International application No.

PCT/GB99/01963

Applicant's or agent's file reference

SJA50479/005

International filing date (day/month/year)

23 June 1999 (23.06.99)

Priority date (day/month/year)

02 July 1998 (02.07.98)

Applicant

HUGHES, John, Farrell et al

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

27 January 2000 (27.01.00)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

S. Mafla

Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

To:

ALLARD, Susan, Joyce  
Boult Wade Tennant  
Verulam Gardens  
70 Gray's Inn Road  
London WC1X 8BT  
ROYAUME-UNI

Date of mailing (day/month/year) 19 April 2000 (19.04.00)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference SJA50479/005	
International application No. PCT/GB99/01963	International filing date (day/month/year) 23 June 1999 (23.06.99)

1. The following indications appeared on record concerning:									
<input type="checkbox"/> the applicant	<input type="checkbox"/> the inventor <input checked="" type="checkbox"/> the agent <input type="checkbox"/> the common representative								
Name and Address ALLARD, Susan, Joyce Boult Wade Tennant 27 Furnival Street London EC4A 1PQ United Kingdom	<table border="1"> <tr> <td>State of Nationality</td> <td>State of Residence</td> </tr> <tr> <td colspan="2">Telephone No. 0171 430 7500</td> </tr> <tr> <td colspan="2">Facsimile No. 0171 831 1768</td> </tr> <tr> <td colspan="2">Teleprinter No.</td> </tr> </table>	State of Nationality	State of Residence	Telephone No. 0171 430 7500		Facsimile No. 0171 831 1768		Teleprinter No.	
State of Nationality	State of Residence								
Telephone No. 0171 430 7500									
Facsimile No. 0171 831 1768									
Teleprinter No.									
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:									
<input type="checkbox"/> the person <input type="checkbox"/> the name <input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence									
Name and Address ALLARD, Susan, Joyce Boult Wade Tennant Verulam Gardens 70 Gray's Inn Road London WC1X 8BT United Kingdom	<table border="1"> <tr> <td>State of Nationality</td> <td>State of Residence</td> </tr> <tr> <td colspan="2">Telephone No. +44 20 7430 7500</td> </tr> <tr> <td colspan="2">Facsimile No. +44 20 7831 1768</td> </tr> <tr> <td colspan="2">Teleprinter No.</td> </tr> </table>	State of Nationality	State of Residence	Telephone No. +44 20 7430 7500		Facsimile No. +44 20 7831 1768		Teleprinter No.	
State of Nationality	State of Residence								
Telephone No. +44 20 7430 7500									
Facsimile No. +44 20 7831 1768									
Teleprinter No.									
3. Further observations, if necessary:									
4. A copy of this notification has been sent to:									
<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned								
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned								
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Anman QIU
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

## PCT

To:

Allard S.  
BOULT WADE TENNANT  
Verulam Gardens  
70 Gray's Inn Road  
London WC1X 8BT  
GRANDE BRETAGNE

RECEIVED

11 OCT 2000

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Records

12/10/00

Date of mailing  
(day/month/year)

09.10.2000

Applicant's or agent's file reference  
SJA50479/005

In Diary LB 12/10

**IMPORTANT NOTIFICATION**

International application No.  
PCT/GB99/01963

International filing date (day/month/year)  
23/06/1999

Priority date (day/month/year)  
02/07/1998

Applicant

UNIVERSITY OF SOUTHAMPTON et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/



European Patent Office - P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk - Pays Bas  
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl  
Fax: +31 70 340 - 3016

Authorized officer

Daniels, H

Tel. +31 70 340-3718



# PATENT COOPERATION TREATY

# PCT

REC'D 11 OCT 2000

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>SJA50479/005</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/GB99/01963</b>	International filing date (day/month/year) <b>23/06/1999</b>	Priority date (day/month/year) <b>02/07/1998</b>
International Patent Classification (IPC) or national classification and IPC <b>B05B5/047</b>		
Applicant <b>UNIVERSITY OF SOUTHAMPTON et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

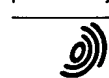
Date of submission of the demand

27/01/2000

Date of completion of this report

09.10.2000

Name and mailing address of the international preliminary examining authority:



European Patent Office - P.B. 5818 Patentaan 2  
 NL-2280 HV Rijswijk - Pays Bas  
 Tel. +31 70 340 - 2040 Tx: 31 651 epo nl  
 Fax: +31 70 340 - 3016

Authorized officer

Guastavino, L

Telephone No. +31 70 340 2867



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/01963

## I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

### Description, pages:

1-17 as originally filed

### Claims, No.:

1-16 as originally filed

### Drawings, sheets:

1/5-5/5 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/01963

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes:	Claims	1-16
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-16
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-16
	No:	Claims	

### 2. Citations and explanations

**see separate sheet**

## VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**Re Item V**

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Document WO-A-9728883 (DO; see search report) discloses a method of spraying liquid droplets from a spray device, which method comprises imparting a unipolar charge to the liquid droplets by double layer charging during the spraying of the droplets from a spray device, the unipolar charge being at a level such that the droplets have a charge to mass ratio of at least  $\pm 1 \times 10^{-4}$  C/kg.

The method of this prior art is concerned with improving the quality of air by precipitating dust particles in a room. There is in this document no disclosure of the reduction of the inhalation of aerosol droplets, nor of any operator present within the test space and thus in potential contact with these droplets.

It is therefore considered that the subject-matter of claim 1 is neither known or derivable from the available prior art, whereby the subject-matter of claims 1-16 is considered as being novel and inventive.

**Re Item VII**

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document Do is not mentioned in the description, nor is this document identified therein.

A.D.

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

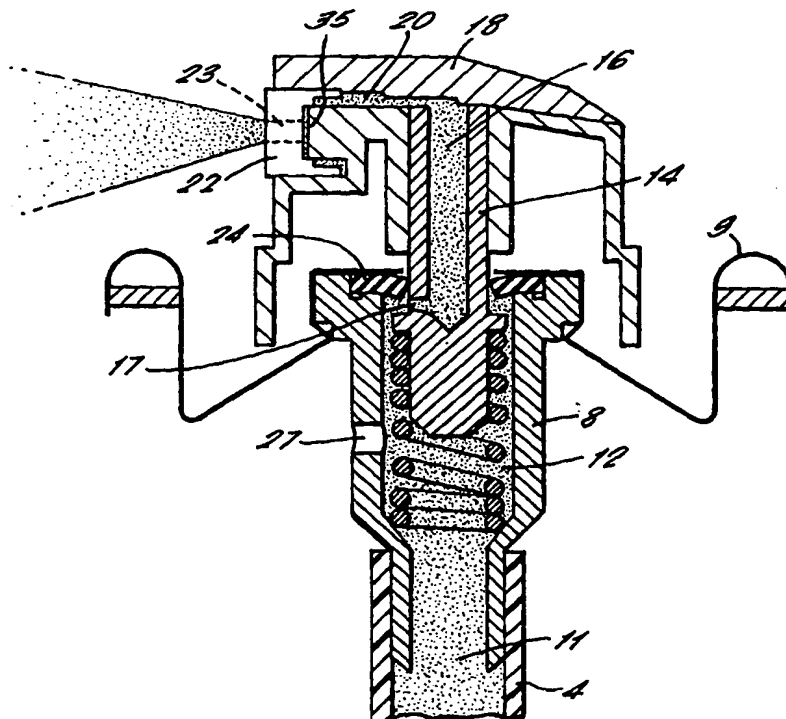
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> : <b>B05B 5/047, A61M 15/02, B65D 83/14</b>		A1	(11) International Publication Number: <b>WO 00/01494</b>
			(43) International Publication Date: 13 January 2000 (13.01.00)
(21) International Application Number: PCT/GB99/01963 (22) International Filing Date: 23 June 1999 (23.06.99) (30) Priority Data: 9814368.8                      2 July 1998 (02.07.98)                      GB (71) Applicants (for all designated States except US): UNIVERSITY OF SOUTHAMPTON [GB/GB]; Highfield, Southampton SO17 1BJ (GB). RECKITT & COLMAN PRODUCTS LIMITED [GB/GB]; One Burlington Lane, London W4 2RW (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): HUGHES, John, Farrell [GB/GB]; 2 Shepherd's Close, Bartley, Southampton SO40 2JL (GB). FOX, Rodney, Thomas [GB/GB]; 30 South Street, Cottingham, Hull HU16 4AS (GB). HARRISON, Mark, Neale [GB/GB]; 27 Cromwell Close, Tutbury, Burton-on-Trent DE13 9HZ (GB). WHITMORE, Lindsey, Faye [GB/GB]; 60 Tees Farm Road, Colden Common, Winchester SO21 1UQ (GB). HARPER, Duncan, Roger [GB/GB]; Flat 2, 78 Boulevard, Hull HU3 2TA (GB). JERRIM, Karen, Louise [GB/GB]; 53 Witt Road, Fair Oak, Eastleigh, Hants SO50 7FN (GB).			(74) Agent: ALLARD, Susan, Joyce; Boulton Wade Tennant, 27 Fumival Street, London EC4A 1PQ (GB). (81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report.

(54) Title: INHALATION OF AEROSOL ACTIVES

## (57) Abstract

A method of reducing the inhalation of airborne/respirable particles or droplets having a diameter of less than 10 micrometres, produced by spraying liquid droplets from a spray device, which method comprises imparting a unipolar charge to the liquid droplets by double layer charging during the spraying of the droplets from a spray device, the unipolar charge being at a level such that the droplets have a charge to mass ratio of at least  $\pm 1 \times 10^{-4}$  C/kg, whereby at least 10 % by volume of the airborne respirable particles or droplets having a diameter of less than 10 micrometres in the vicinity of the mouth, nose or upper respiratory tract do not enter the lungs.





**FOR THE PURPOSES OF INFORMATION ONLY**

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DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 99/01963

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B05B5/047 A61M15/02 B65D83/14

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 B05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 654 273 A (SEKHAVAT) 10 May 1991 (1991-05-10) page 8, paragraph 2 -page 11, line 3; figures 1,3 ---	1
A	US 5 642 727 A (DATTA) 1 July 1997 (1997-07-01) abstract column 3, line 64 - line 65 ---	1
A	WO 94 19042 A (BESPAK) 1 September 1994 (1994-09-01) page 1, line 17 - line 35 page 9, line 10 - line 22; figure 1 --- -/--	1



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

16 September 1999

Date of mailing of the international search report

27/09/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  
Fax: (+31-70) 340-3016

Authorized officer

Guastavino, L

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 99/01963

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 714 007 A (PLETCHER) 3 February 1998 (1998-02-03) column 8, line 4 - line 50 column 10, line 40 - line 67; figures 3,6,7	1
A	WO 97 28883 A (UNIVERSITY OF SOUTHAMPTON) 14 August 1997 (1997-08-14) the whole document	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 99/01963

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2654273 A	10-05-1991	NONE	
US 5642727 27 A		NONE	
WO 9419042 A	01-09-1994	EP 0684852 A	06-12-1995
US 5714007 A	03-02-1998	AU 6382596 A	24-12-1996
		CA 2223251 A	12-12-1996
		EP 0828564 A	18-03-1998
		WO 9639257 A	12-12-1996
WO 9728883 A	14-08-1997	AU 1613397 A	28-08-1997
		BR 9707383 A	13-04-1999
		CN 1214640 A	21-04-1999
		EP 0888162 A	07-01-1999
		NZ 331255 A	30-08-1999